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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,217	08/02/2005	Aleksei Mikhailov	A-9472	8180

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EXAMINER

STAFFORD, PATRICK

ART UNIT	PAPER NUMBER
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2828

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/526,217

Applicant(s)

MIKHAILOV ET AL.

Examiner

Patrick Stafford

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/27/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ota (U.S. Patent 5,773,345, hereafter '345).

Claim 1: '345 teaches the semiconductor laser device comprising:

a semiconductor laser element or a host of individual lasers mounted in parallel with a host of exit surfaces from which laser light can emerge which in a first direction has greater divergence than in the second direction which is perpendicular to it (col. 20, lines 53-65 and Fig. 29, parts 116x, 116y, 116z);

at least one reflecting means which is located spaced apart from the exit surfaces outside of the semiconductor laser element or of the individual laser, with at least one reflecting surface which can reflect back at least parts of the laser light which has emerged from the semiconductor laser element or the individual laser through the exit surfaces into the semiconductor laser element or the individual lasers such that the mode spectrum of the semiconductor laser element or of the individual lasers influenced thereby (col. 20, lines 53-65 and Fig. 29 part 125);

at least one reflecting surface of the reflection means is concavely curved (col. 20, lines 53-65 and Fig. 29 part 125).

Art Unit: 2828

Claim 2: '345 teaches the semiconductor laser of claim 1, wherein at least one reflecting surface can reflect back component beams of laser light onto the exit surfaces such that they are used as an aperture (Fig. 27, emitted from parts 116x, 116y, 116z).

Claim 3: '345 teaches the laser device as claimed in claims 1 or 2 above, wherein the semiconductor laser device comprises a lens means which is located between the reflection means and the semiconductor laser element or the individual emitters and which can partially reduce the divergence of the laser light in the first direction (col. 19, lines 1-37 and Fig. 24 part 118).

Claim 4: '345 teaches the semiconductor laser device of claims 1 to 3, wherein the reflection means has a reflecting surface on which the component beams emerging from different exit surfaces can be reflected (col. 20, lines 53-65 and Fig. 29 part 125).

Claim 5: '345 teaches the semiconductor laser device of claims 1 to 3, wherein the reflection means (Fig. 24 part 119) has a host of reflecting surfaces (Fig. 24 part 124) which can each reflect the component beams emerging from individual exit surfaces (Fig. 24, parts 116x, 116y, 116z).

Claim 9: '345 teaches the semiconductor laser device of claims 1 to 5, wherein the semiconductor laser element is exposed to a voltage (col. 16, lines 50-59) and is supplied with current for producing electron-hole pairs only in partial areas which correspond to the three-dimensional extension of the desired mode of the laser light (col. 19, lines 34-37).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota (U.S. Patent 5,773,345, hereafter '345) in view of Scifres et al (U.S. Patent 4,656,641, hereafter '641).

Claim 6: '345 teaches the semiconductor laser of claims 1 to 5, wherein the semiconductor laser device comprises a beam transformation unit (col. 20, lines 29-40 and Fig. 27 part 121). It does not explicitly teach a beam transformation unit which is made especially as a beam rotation unit and can rotate individual component beams at one time by roughly 90°. However, '641 teaches a semiconductor laser comprising a beam transformation unit which is made especially as a beam rotation unit and can rotate individual component beams at one time by roughly 90° (col. 5, lines 22-32) in order for more selective tuning. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a beam transformation unit which is made especially as a beam rotation unit and can rotate individual component beams at one time by roughly 90° in order for more selective tuning.

Claim 7: '345 and '641 teach the semiconductor laser of claim 6. '345 teaches the beam transformation unit (Fig. 22, part 108) being between the reflection means (Fig. 22, part 104) and the lens means (Fig. 22, part 107).

Art Unit: 2828

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ota (U.S. Patent 5,773,345, hereafter '345) in view of Scifres et al (U.S. Patent 4,656,641, hereafter '641) and further in view of Austin (U.S. Patent 4,887,270, hereafter '270).

'345 and '641 teach the semiconductor laser of claims 1 to 7. '641 teaches tuning the frequency in a laser cavity (Figs. 2), however it does not explicitly teach the frequency tuning means comprising a frequency-doubling element which is located between the reflection means and the semiconductor element, especially between the reflection means and the lens means. '270 teaches a semiconductor laser device with a frequency-doubling element which is located between the reflection means and the semiconductor element, especially between the reflection means (Fig. 1, part 21) and the lens means (Fig. 1, part 25) in order to output a frequency doubled wavelength. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a frequency-doubling element which is located between the reflection means and the semiconductor element, especially between the reflection means and the lens means in order to output a frequency doubled wavelength.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Stafford whose telephone number is (571) 270-1275. The examiner can normally be reached on M-Th 7:30-5 EST.

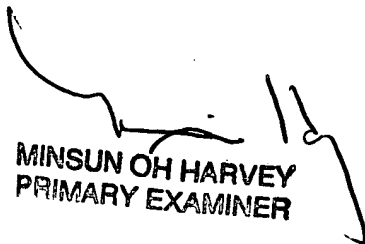
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2828

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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PRIMARY EXAMINER